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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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ST. ONGE STEWARD JOHNSTON & REENS, LLC
986 BEDFORD STREET
STAMFORD, CT 06905-5619

EXAMINER

CHEN, CHONGSHAN

ART UNIT	PAPER NUMBER
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2172

DATE MAILED: 01/15/2004

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/785,573

Applicant(s)

CREETH, RICHARD F.

Examiner

Chongshan Chen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 October 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-43 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-43 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

1. This action is responsive to communications, filed on 10 October 2003. Claims 1-43 are pending.

Response to Arguments

2. As per applicant's arguments regarding "Arning, however, is directed to a completely different system ... While Arning and the present invention both relate to multi-dimensional databases, the goals, structure and operation of the systems are completely different" have been considered but are not persuasive. Arning and the claimed invention both relate to multi-dimensional databases. Both multi-dimensional databases have the same structure, they are used to store cube/dimension object. Although the goals of Arning and the claimed invention are different, it is noted that the goal is not recited in the rejected claims. Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

3. As per applicant's arguments regarding claims 1 and 10, Arning does not disclose that each dataserer have stored thereon both at least one cube object comprising at least one saved view of data and at least one dimension object comprising at least one saved subset of elements have been considered but are not persuasive. A cube object is a three dimensional object, therefore a cube object is a dimension object. Arning teaches each dataserer (Arning, Fig. 1, element 138) have stored thereon both at least one cube object (Arning, Fig. 2 & 3) comprising at least one saved view of data and at least one dimension object comprising at least one saved subset of elements (Arning, Fig. 2 & 3, each element 202, 214, 222 is a subset of the

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multidimensional database 200; the cube object is a dimension object). Both the cube object and the dimension object are stored on the dataserver 138.

4. As per applicant's arguments regarding claims 1 and 10, Arning discloses two separate multi-dimensional databases (index multi-dimensional database 134 and subject multi-dimensional database 136), each of these databases 134, 136 employs a standard object model, having stored thereon two separate sets of cube objects ... there is no disclosure that at least one of the databases has stored thereon both at least one cube object comprising at least one saved view of data and at least one dimension object comprising at least one saved subset of elements have been considered but are not persuasive. Arning teaches both a cube object (Arning, Fig. 2 & 3) and a dimension object (Arning, Fig. 2 & 3, a cube object is a dimension object) are stored on a dataserver (Arning, Fig. 1, element 138; databases 134, 136 are part of the dataserver 138).

5. As per applicant's arguments regarding "it would not have been obvious for one skilled in the art to modify Arning to arrive at the present invention ... Claims 1 and 10 are directed to a novel object model, the purpose and benefit of which is to provide a much more intuitive technique from a programming perspective as compared to employing low-level API function calls ... Arning is not at all concerned with providing an object model which is more intuitive from a programming perspective ..." have been considered but are not persuasive. Although the purpose and benefit of Arning and the claimed invention are different, it is noted that the purpose and benefit are not recited in the rejected claims. Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

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6. Applicant's arguments, see page 8, paragraph 1, filed on 10 October 2003, with respect to the rejection(s) of claim(s) 11, 24 and 27 under 102(e) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Fattah et al. ("Fattah", Pub. No.: US 2001/0007984). Fattah teaches instantiating and inflating specified objects up-front a first time the database is accessed (Fattah, page 1, [0019] user requests a service, a service object is instantiated, the service object is a specified object), and instantiating and inflating objects which are not specified objects on demand as the nonspecified objects are accessed (Fattah, page 1, [0020], instantiating one more business objects, the business objects are nonspecified objects).

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

8. Claims 1-10 are rejected under 35 U.S.C. 102(e) as being anticipated by Arning et al. ("Arning", Pub. No.: US 2001/0054034).

As per claim 1, Arning discloses an object model for manipulating multidimensional data comprising:

a dataspace comprising at least one dataserwer (Arning, Fig. 1, element 138);

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at least one cube object stored on each of said at least one dataserer, each of said at least one cube object comprising at least one saved view of data (Arning, Fig. 2 & 3); and

at least one dimension object stored on each of said at least one dataserer, each of said at least one dimension object comprising at least one saved subset of elements (Arning, Fig. 2 & 3, each element 202, 214, 222 is a subset of multidimensional database 200; the cube object is a dimension object because the cube object is a three dimensional object).

As per claim 2, Arning teaches all the claimed subject matters as discussed in claim 1, and further discloses a plurality of dataservers (Arning, Fig. 1, page 1, [0013]).

As per claim 3, Arning teaches all the claimed subject matters as discussed in claim 1, and further discloses at least one dataserer for a database having multidimensional financial data stored thereon (Arning, Fig. 1-6, page 1, [0014]).

As per claim 4, Arning teaches all the claimed subject matters as discussed in claim 1, and further discloses at least one dataserer comprises at least one dataserer for an OLAP database (Arning, Fig. 1, 138, OLAP database system).

As per claim 5, Arning teaches all the claimed subject matters as discussed in claim 1, and further discloses each of said at least one dimension object further comprises at least one saved element (Arning, Fig. 1-10).

As per claim 6, Arning teaches all the claimed subject matters as discussed in claim 1, and further discloses each of said at least one dimension object further comprises at least one saved hierarchy (Arning, Fig. 1-10).

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As per claim 7, Arning teaches all the claimed subject matters as discussed in claim 1, and further discloses the at least one saved view of data comprises at least one saved value of data (Arning, Fig. 1-10).

As per claim 8, Arning teaches all the claimed subject matters as discussed in claim 1, and further discloses said dataspace comprises an entry point into said object model (Arning, Fig. 1-10).

As per claim 9, Arning teaches all the claimed subject matters as discussed in claim 1, and further discloses dataspace comprises an entry point into said object model (Arning, Fig. 1-10).

As per claim 10, Arning discloses an object model for manipulating multidimensional data comprising:

- a dataspace comprising a plurality of dataservers for OLAP databases, said dataspace comprising an entry point into said object model (Arning, Fig. 1, [0013]);

- at least one cube object stored on each of said dataservers, each of said at least one cube object comprising at least one saved view of data, each of the at least one saved view of data comprising at least one saved value of data and at least one subset of data (Arning, Fig. 2 & 3); and

- at least one dimension object stored on each of said dataservers, each of said at least one dimension object comprising at least one saved subset of elements, at least one element and at least one hierarchy (Arning, Fig. 2 & 3, each element 202, 214, 222 is a subset of multidimensional database 200; the cube object is a dimension object because the cube object is a three dimensional object).

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 11-43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Arning et al. ("Arning", Pub. No.: US 2001/0054034) in view of Fattah et al. ("Fattah", Pub. No.: US 2001/0007984).

As per claim 11, Arning discloses a system for displaying data from a multidimensional database to a user, said system comprising:

a system computer (Arning, Fig. 1);

a multidimensional database accessible by said computer, said multidimensional database having objects stored thereon (Arning, Fig. 1).

Arning does not explicitly disclose object model software executing on said system computer for instantiating and inflating specified objects up-front a first time said database is accessed, and for instantiating and inflating objects which are not specified objects on demand as the nonspecified objects are accessed. Fattah teaches instantiating and inflating specified objects up-front a first time the database is accessed (Fattah, page 1, [0019] user requests a service, a service object is instantiated, the service object is a specified object), and instantiating and inflating objects which are not specified objects on demand as the nonspecified objects are accessed (Fattah, page 1, [0020], instantiating one more business objects, the business objects are

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nonspecified objects). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have the instantiation and inflation step in the system of Arning in order to provide service to the user.

As per claim 12, Arning and Fettah teach all the claimed subject matters as discussed in claim 11, and further disclose software executing on said computer for receiving from the user an indication of specified objects (Arning, Fig. 1).

As per claim 13, Arning and Fettah teach all the claimed subject matters as discussed in claim 11, and further disclose software executing on said computer for receiving from the user state information (Fettah, Fig. 10).

As per claim 14, Arning and Fettah teach all the claimed subject matters as discussed in claim 11, and further disclose the specified objects comprise collections of objects (Fettah, Fig. 5).

As per claim 15, Arning and Fettah teach all the claimed subject matters as discussed in claim 11, and further disclose the specified objects comprise specific properties of objects (Fettah, Fig. 6 & 7).

As per claim 16, Arning and Fettah teach all the claimed subject matters as discussed in claim 11, and further disclose multi-dimensional database comprises a database having multidimensional financial data stored thereon (Arning, Fig. 1-3).

As per claim 17, Arning and Fettah teach all the claimed subject matters as discussed in claim 11, and further disclose multidimensional database comprises an OLAP database (Arning, Fig. 1).

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As per claim 18, Arning and Fettah teach all the claimed subject matters as discussed in claim 11, and further disclose a dataspace comprising at least one dataserver; at least one cube object stored on each of said at least one dataserver, each of said at least one cube object comprising at least one saved view of data; and at least one dimension object stored on each of said at least one dataserver, each of said at least one dimension object comprising at least one saved subset of elements (Arning, Fig. 1-4).

As per claim 19, Arning and Fettah teach all the claimed subject matters as discussed in claim 18, and further disclose the specified objects are identified via said dataspace (Arning, Fig. 1-4).

As per claim 20, Arning and Fettah teach all the claimed subject matters as discussed in claim 19, and further disclose software executing on said computer for receiving from the user an indication of specified objects (Fettah, Fig. 3 & 8).

As per claim 21, Arning and Fettah teach all the claimed subject matters as discussed in claim 20, and further disclose the indication of specified objects comprises a structured string variable (Fettah, Fig. 8).

As per claim 22, Arning teaches all the claimed subject matters as discussed in claim 21, and further discloses the structured string variable comprises raw text separated by delimiters (Fettah, Fig. 6).

As per claim 23, Arning and Fettah teach all the claimed subject matters as discussed in claim 21, except for explicitly disclosing the structured string variable comprises strings in an extensible markup language (XML) format. However, it would have been obvious to one of

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ordinary skill in the art at the time the invention was made to include the structured string variable in an extensible markup language (XML) format in order to provide web applications.

As per claim 24, Arning discloses a system for displaying data from a multidimensional OLAP database to a user, said system comprising:

- a system computer (Arning, Fig. 1);

- a multidimensional database accessible by said computer, said multidimensional database having objects stored thereon (Arning, Fig. 1).

Arning does not explicitly disclose object model software executing on said system computer for instantiating and inflating specified objects up-front a first time said database is accessed, and for instantiating and inflating objects which are not specified objects on demand as the nonspecified objects are accessed;); and software executing on said computer for receiving from the user an indication of specified objects and state information. Fettah teaches instantiating and inflating specified objects up-front a first time the database is accessed (Fettah, page 1, [0019] user requests a service, a service object is instantiated, the service object is a specified object), and instantiating and inflating objects which are not specified objects on demand as the nonspecified objects are accessed (Fettah, page 1, [0020], instantiating one more business objects, the business objects are nonspecified objects); and receiving from the user an indication of specified objects and state information (Fettah, Fig. 10). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have the instantiation and inflation step in the system of Arning in order to provide service to the user.

Claims 25-26 are rejected on grounds corresponding to the reasons given above for claims 14-15.

As per claim 27, Arning discloses a system for displaying data from a multidimensional database to a user, said system comprising:

- a system computer (Arning, Fig. 1);
- a multidimensional database accessible by said computer, said multidimensional database having objects stored thereon (Arning, Fig. 1); and
- a dataspace comprising at least one dataserer (Arning, Fig. 1, element 138);
- at least one cube object stored on each of said at least one dataserer, each of said at least one cube object comprising at least one saved view of data (Arning, Fig. 2 & 3); and
- at least one dimension object stored on each of said at least one dataserer, each of said at least one dimension object comprising at least one saved subset of elements (Arning, Fig. 2 & 3, a cube object is a dimension object because a cube object is three dimensional).

Arning does not explicitly disclose object model software executing on said system computer for instantiating and inflating specified objects up-front a first time said database is accessed, and for instantiating and inflating objects which are not specified objects on demand as the nonspecified objects are accessed. Fettah teaches instantiating and inflating specified objects up-front a first time the database is accessed (Fettah, page 1, [0019] user requests a service, a service object is instantiated, the service object is a specified object), and instantiating and inflating objects which are not specified objects on demand as the nonspecified objects are accessed (Fettah, page 1, [0020], instantiating one more business objects, the business objects are nonspecified objects). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have the instantiation and inflation step in the system of Arning in order to provide service to the user.

Claims 28-29 are rejected on grounds corresponding to the reasons given above for claims 16-17.

As per claim 30, Arning and Fettah teach all the claimed subject matters as discussed in claim 27, and further disclose a plurality of dataservers (Arning, Fig. 1, page 1, [0013]).

As per claim 31, Arning and Fettah teach all the claimed subject matters as discussed in claim 27, and further disclose at least one dimension object further comprises at least one saved element (Arning, Fig. 1-17).

As per claim 32, Arning and Fettah teach all the claimed subject matters as discussed in claim 27, and further disclose at least one dimension object further comprises at least one saved hierarchy (Arning, Fig. 6).

As per claim 33, Arning and Fettah teach all the claimed subject matters as discussed in claim 27, and further disclose at least one saved view of data comprises at least one saved value of data (Arning, Fig. 1-17).

As per claim 34, Arning and Fettah teach all the claimed subject matters as discussed in claim 27, and further disclose the at least one saved view of data comprises at least one saved subset of data (Arning, Fig. 1-4).

As per claim 35, Arning teaches all the claimed subject matters as discussed in claim 27, and further discloses an entry point into said object model (Arning, Fig. 1, page 1, [0018]).

Claims 36-38 are rejected on grounds corresponding to the reasons given above for claims 13-15.

Claims 39-43 are rejected on grounds corresponding to the reasons given above for claims 19-23.

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Raverdy et al. (6,330,717) disclose process and system for developing an application program for a distributed adaptive run-time platform.

Hannan et al. (6,539,398) disclose object-oriented programming model for accessing both relational and hierarchical databases from an objects framework.


Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chongshan Chen whose telephone number is 703-305-8319. The examiner can normally be reached on Monday - Friday (8:00 am - 4:30 pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John E Breene can be reached on (703)305-9790. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)305-3900.

January 8, 2004


**SHAHID ALAM
PRIMARY EXAMINER**